

Remarks

Reconsideration of the application is requested in view of the amendments above, documents submitted herewith, and comments with follow.

Dealing with the matters raised by the Examiner in the Office Action, and turning first to the drawings, in numbered section 8, the Examiner has objected to Figures 1 and 2 and reference character 12. In Figure 2 as submitted herewith, the reference character 12 has been changed to 12'. The specification at page 26 has also been corrected. With that, it is believed that all is in order.

Regarding numbered section 9, it is noted that the confocal scanning unit 10 of Figure 2 includes the shutter, which is identified in the box beneath item 14 on the right hand side of Figure 2. This was intended to cover both the shutter means of claim 33 and the second shutter means of claim 34. However, to make matters clearer, Figure 1 has been amended in the replacement sheets submitted herewith to introduce the shutter means 15 and the second shutter means 17. The specification, on page 25, has been appropriately amended, as well. All is believed to be in order.

Regarding items 10 and 11 of the Office Action, a replacement abstract is submitted herewith. Approval is requested.

Regarding item 13 of the Office Action, missing headings have been provided.

Regarding item 14 of the Office Action, further guidance of the Examiner would be appreciated. As the Examiner will understand, the present application is a national filing, and it is believed that the specification actually is in proper form. If, however, the Examiner requests that a particular portion or portions of the summary be moved to the detailed description, it would be helpful if the Examiner would work with the applicant and identify what the Examiner would like to have moved.

Regarding item 15 of the Office Action, the changes suggested by the Examiner have been effected in the amendments above.

Regarding item 16 of the Office Action and the rejection of claims 34, 48 and 49 under 35 U.S.C. §112, with regard to claims 34 and 49, "due to other effects" language has been deleted from claims 34 and 49. All is therefore believed to be in

order. Regarding claim 48, it has been appropriately amended above to provide positive steps. All is believed to be in order, as well.

The Examiner has then rejected claims 32 and 48 under 35 U.S.C. §102(b) as being anticipated by Endo published U.S. application number US 2002/0097490. Reconsideration is requested.

Endo is familiar to the applicant, having been cited in the underlying international application PCT/GB03/04486. The Examiner refers particularly to Figure 19 of Endo and equates control circuit 78 with the controller 18 of the present application. However, this overlooks the crucial limitation in the claims that the controller is programmed to function as a state machine.

The inventors have found the use of a general purpose controller to control the type of confocal scanning imaging system to which the present invention relates was too unpredictable to produce useful results. In practice, during normal operation of such a computer, it carries out various housekeeping tasks required by its operating system. While this is not problematic for moderately complex control tasks, this can cause serious problems when controlling a system in which timing is critical, as in the present case.

In a system of the type to which the present invention is directed, close control of the scanning system together with the excitation light and/or the image capture device is required to ensure that their operation is sufficiently accurately synchronized. The inventors have determined that the use of a dedicated controller programmed to function as a state machine achieves this objective and overcomes the drawbacks noted above associated with control using a general purpose computer alone.

In this connection, it is to be noted that a state machine is a specific formalism which operates to progress in order through a series of predefined states and is particularly beneficial in control applications where timing is critical as in the present case. The movement of the state machine from one state to the next is determined by a clock signal and its behavior is precisely predictable and well controllable.

Furthermore, provision of a computer in combination with a state machine controller enables the contents of a state table for execution by the controller to be loaded from the host computer according to instructions from the user, indicating the

imaging protocol that is to be followed in a given process. This makes the operation of the system of the invention particularly versatile and flexible.

There is no disclosure in Endo of a controller programmed to function as a state machine, and this critical feature of the present invention is therefore lacking in the prior art. There is furthermore no disclosure or suggestion in Endo of a separate host computer in combination with a controller programmed to function as a state machine that functions to provide the benefits described above.

In addition, claims 32 and 48 require that the excitation light source and/or the image capture device are operated by the controller in such that light is only incident on the image capture device for a period equivalent to a whole number of scanning cycles. This feature too is absent from Endo, and not disclosed in the passages relied on by the Examiner.

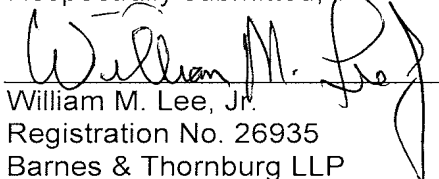
It is therefore submitted that the claims currently under examination are novel and nonobvious in view of the prior art.

Claims to the same scope have been allowed in the corresponding European application that has now been granted under EP 155233 B1 in the face of the same prior art. The Examiner is invited to examine that document.

In view of the foregoing, it is believed that the claims under consideration are in condition for allowance, in the Examiner's further and favorable reconsideration are urged.

August 14, 2009

Respectfully submitted,



William M. Lee, Jr.
Registration No. 26935
Barnes & Thornburg LLP
P.O. Box 2786
Chicago, Illinois 60690-2786
(312) 214-4800
(312) 759-5646 – Fax